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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,550	07/01/2004	Peter-Andre Redert	NL 020004	5130

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS  
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BRIARCLIFF MANOR, NY 10510

EXAMINER

YANG, ANDREW GUS

ART UNIT PAPER NUMBER

2628

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/500,550	<b>Applicant(s)</b> REDERT, PETER-ANDRE	
	<b>Examiner</b> Andrew Yang	<b>Art Unit</b> 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-4 and 8-10 is/are rejected.
- 7) ☒ Claim(s) 2 and 5-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities: the disclosure lacks appropriate section headings.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-8 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim is directed towards an abstract idea of scaling a three-dimensional model or manipulating geometry.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-4, and 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Sullivan et al. (U.S. PGPUB 20020113752).

With respect to claim 1, Sullivan et al. disclose a method for scaling a voxel 170 in Fig. 16 at distance  $D_v$  to be a depth value from 1 to N, in which N is the number of

optical elements 160-168 in Fig. 16 (paragraph 173, lines 1-5). Voxel 170 is part of a three-dimensional model, and scaling is performed based on the direction of the lens 22 of the projector 20 in Fig. 16, or viewer. The scaling is based on depth and color (paragraph 165, lines 1-6) properties of the human visual perception of the viewer because these properties are associated with the scaled voxel.

With respect to claim 3, Sullivan et al. disclose the method of claim 1, wherein half the brightness of voxel 170 is assigned to each of the voxels 172-174 in Fig. 16. Therefore, a second property of human visual perception is sensitivity to a difference of luminance values between neighboring voxels, or three-dimensional pixels.

With respect to claim 4, Sullivan et al. disclose the method of claim 1, wherein color values are adjusted in step 200 in Fig. 20 for voxels on the nearest bounding optical elements using the depth adjustment value or values using Equations (7)-(8) and the method displays the adjusted voxels in step 202 in Fig. 20 on the nearest bounding optical elements with the adjusted color values. Therefore, a third property of human visual perception is sensitivity to a difference of luminance values between neighboring voxels, or three-dimensional pixels.

With respect to claim 9, Sullivan et al. disclose a multi-planar volumetric display (MVD) controller 18, or scaling unit in Fig. 1 for performing anti-aliasing on the image data (paragraph 46, lines 2-3). The anti-aliasing process performs the method as in claim 1 (see rationale for rejection of claim 1).

With respect to claim 10, Sullivan et al. disclose an image projector 20 in Fig. 1 with associated optics 22 in Fig. 1 for projecting two-dimensional slices 24-30 of the 3D

image (paragraph 49, lines 1-3) as a receiving means. A scaling unit, or MVD controller 18 in Fig. 1 performs anti-aliasing on the image data (paragraph 46, lines 2-3) (see rationale for rejection of claim 9). A multiple optical element (MOE) device 32, or display means in Fig. 1 generates a first volumetric three-dimensional image 35 which appears to the viewer 12 (paragraph 49, lines 4-6).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sullivan et al. (U.S. PG PUB 20020113752).

With respect to claim 8, Sullivan et al. disclose the method in claim 1. It is noted that Sullivan et al. do not explicitly teach a range detection step. However, detecting a range of depth values is well known in the art to determine visibility within a scene. Therefore, it would have been obvious to include a range detection step to estimate the range of depth values because this would allow for determining the minimum and maximum values D1 and DN for optical elements 160-168 which span a distance D in Fig. 16 (paragraph 164, lines 1-3). A comparison step is performed to compare the range of depths of voxels 172-174 with an output range of depth values associated with optical elements 162-164, respectively (paragraph 191, lines 7-8).

***Allowable Subject Matter***

Claims 2 and 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patent is cited to further show the state of the art with scaling a three-dimensional model:

U.S. Patent No. 6,636,228 to Morton et al. for a method of setting contrast of colors detected by the human eye

U.S. PGPUB 20030067476 to Miller et al. for displaying an image and determining a viewer's gaze on a display.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Yang whose telephone number is (571) 272-5514. The examiner can normally be reached on 8:30-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on (571) 272-7653. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2628

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AGY

4/7/06

A handwritten signature in black ink, appearing to read "Mark Zimmerman", with a long horizontal line extending to the right.

MARK ZIMMERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600